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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/510,116	02/22/2000	Anthony D Minervini	804RP746	2137

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EXAMINER

EASTHOM, KARL D

ART UNIT	PAPER NUMBER
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2832

DATE MAILED: 04/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/510,116

Applicant(s)

Minervine et al.

Examiner

Karl Easthom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jan 6, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 8, 10-16, 18-32, and 38-42 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16, 18-32, and 38-42 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 8, and 10-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 32
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, 7-8, and 10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sunuhara (JP 4-150001 abstract only), or JP 9-199302, in view of Niihara et al. (JP 6-69416), or McGuire et al. '403. Sunuhara or JP '302 disclose the claimed invention at the abstract, and the main figure thereat, and at Fig 6, respectively, except the PTC thermistor elements being polymer. In Sunuhara, the PTC elements are 12, 14 (on either side of second substrate 28c) material being polymer. The substrates are 28a/28b – first substrate ; 28c/28b – second substrate; and 28e/28d – third substrate, with electrodes 30a-30e, and end terminations 32, 34. The first surface of first substrate 28a, 28b is not flat, but the surface has a right angle where the first thermistor 12 touches first surface 28b of first substrate 28a/28b, and the electrode 30a touches the first surface 28a of first substrate 28a/28b. Similar remarks apply for the other insulating surfaces. JP '302 discloses insulating substrates 16, 17 with PTC elements 11, and wrap around electrodes 23. Niihara discloses circuit mounting of polymer PTC resistors and discloses the latter are useful for replacing ceramic thermistors such as that of Sunuhara at par. 16 in order to form a reduced size. McGuire discloses that ceramic and polymer thermistor devices are well known for current protection at col. 1, the latter useful in order to reduce the size. It would have been obvious to substitute one well-known material for another where both are PTC circuit protection devices, where one has certain advantages such as reduced size, and polymer devices need not be sintered as ceramics. As to claim 7, ceramic, dielectric or other

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material is disclosed at the top of col. 8 of McGuire, and where copper is disclosed for the electrodes at col. 5, lines 5-12, the insulating layer is deemed a copper clad PC board since it can be used as a PC board and no other printed circuits are on same. It would have been obvious to replace the well known equivalent materials in the electrical resistor arts for each other where Sunahara employs a ceramic to insulate, and to employ the copper conduct to conduct electricity for the purpose of employing well known replacement parts during shortage of other equivalent parts. As to claims 14-15, the multiple layer foils are disclosed as a known electrode for polymers in McGuire as 100,150,180 for example, so that it would have been obvious to employ the materials that are known to be compatible with metal foils. In claim 13, the current flows from end termination 34 to end termination 32, via electrode 30a to thermistor 12 to electrode 30b. In claim 11, the third substrate is 28e having electrode 30d, with second substrate 28c having electrode 30b, and second PTC element 14. In claim 12, the thermistors are in parallel.

3. Claims 16, 18-32 and 38-42 are allowed.

4. Applicant's arguments filed 1/6/03 have been considered but are not persuasive.

Applicant argues there is no suggestion for replacing ceramic PTC materials for polymer PTC materials. This is not correct. The two materials are known replacements for one another as noted above in the art applied. That Sunahara uses two different elements is not germane to the issue at hand, since the polymer and particles can be different or the same. That the substrates are not separate is not correct since the electrode 30b appears to be between the two substrates 28b and 28c. Or since 28b is another substrate, substrates 28a and 28c are separate.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl D Easthom whose telephone number is 703 308-3306. The

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examiner can normally be reached on M-Th, 5:30AM-4:00PM. The fax phone numbers for the organization where this application or proceeding is assigned are 703 308-7722 for regular communications and 703 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0956.

Karl D Easthom  
Primary Examiner  
Art Unit 2832

KDE  
August 21, 2002

  
**KARL D. EASTHOM**  
**PRIMARY EXAMINER**